

FRANKLINIELLA HAWKSWORTHI, A NEW SPECIES ON
DWARFMISTLETOE OF PONDEROSA PINE IN SOUTHWESTERN
UNITED STATES

(THYSANOPTERA: THRIPIDAE)

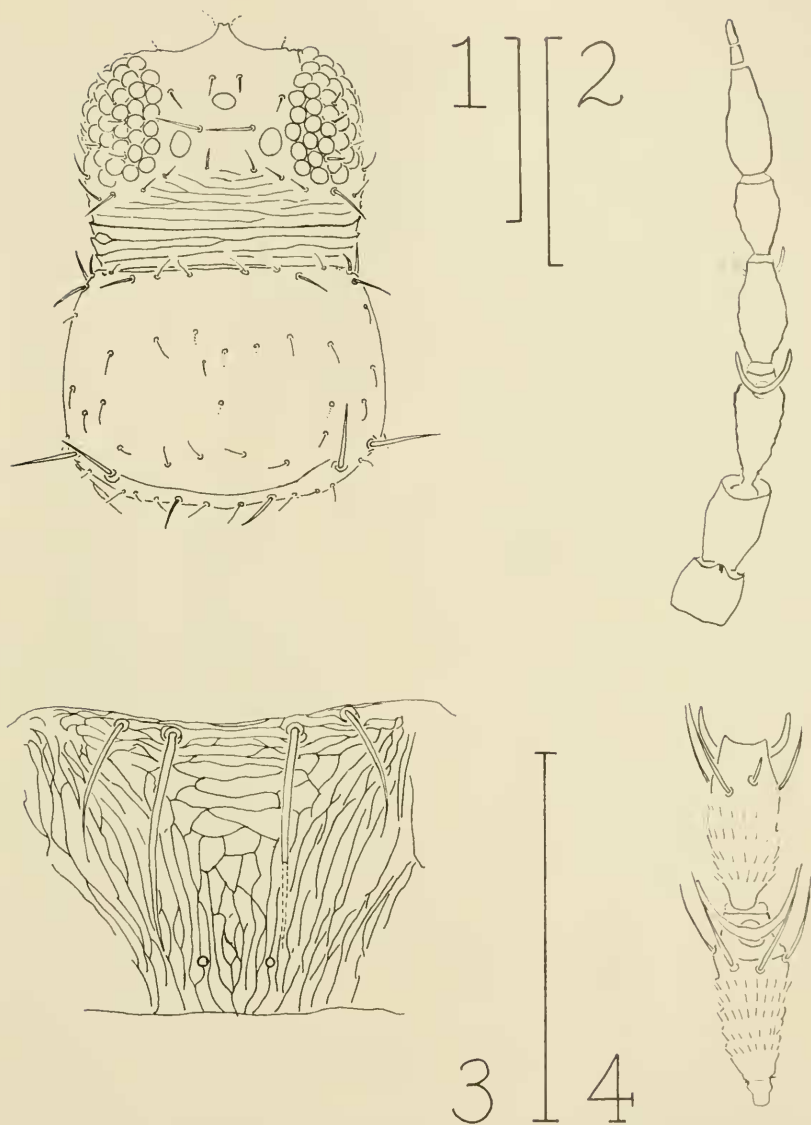
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ABSTRACT—*Frankliniella hawksworthi*, n. sp., which is believed to be the chief pollinator of the dwarfmistletoe *Arceuthobium vaginatum* f. *cryptopodum* (Engelm.) Gill, is named and described.

Frankliniella hawksworthi is a new thrips species found by U. S. Forest Service pathologist F. G. Hawksworth (1961:10) in the course of studies on *Arceuthobium vaginatum* f. *cryptopodum* (Engelm.) Gill. This dwarfmistletoe parasitizes ponderosa pine (*Pinus ponderosa* Laws.) in southwestern U. S., and Hawksworth suspects that the thrips is the chief pollinating agent of the parasite plant.

The genus *Frankliniella* Karny is distinguished by 2 pairs of major setae on the anterior pronotal margin, which are lacking in virtually all other thripid genera that have a pair of major setae at each posterior angle of the pronotum. The ctenidium on each side of abdominal tergum VIII ends laterally just before the spiracle in all *Frankliniella* species (fig. 6), and behind the spiracle near the posterior margin of the tergum in virtually all other thripid genera that have ctenidia (fig. 5).

F. hawksworthi is easily distinguished from other dark species of *Frankliniella* in western North America. In general appearance it is most like *minuta* (Moulton), but it differs in having 4 or 5 dorsal rows of microtrichia on antennal segments III and IV; transverse head with pair iv largest of the ocular setae; pronotal posteromarginal setae iii-v subequal, and metanotal sculpture distinct. *F. minuta* has only 2 or 3 dorsal rows of microtrichia on antennal segments III and IV; quadrate head with ocular seta iii largest; pronotal posteromarginal seta iv much larger than i, iii, and v; and discal metanotal sculpture weak. *F. achaeta*, like *minuta*, has antennal microtrichia scant and head quadrate with ocular seta iii largest. *F. hawksworthi* has its major setae short, no pronotals exceeding $\frac{1}{2}$ the length of the pronotum; appendages almost uniformly dark in fully colored specimens, and posterior marginal comb complete on tergum VIII of both sexes. In these characteristics it differs from the remaining dark species of the same area, for they have some or most pronotal major setae half as long as the pronotum or longer, appendages varying in color, and 8th tergal comb of male or both sexes interrupted or wanting.



FIGS. 1-4. *Frankliniella hawksworthi*, n. sp., ♀: 1, head and pronotum; 2, antenna, outline and forked sense cones; 3, metanotum; 4, antennal segments III and IV. Line = 0.1 mm.

This new species is named in honor of its finder. I thank Dr. Hawksworth for the specimens in the National Collection, his observations on biology of the thrips, and the opportunity to describe it. I am also indebted to Dr. Lewis J. Stannard, Illinois Natural History Survey,

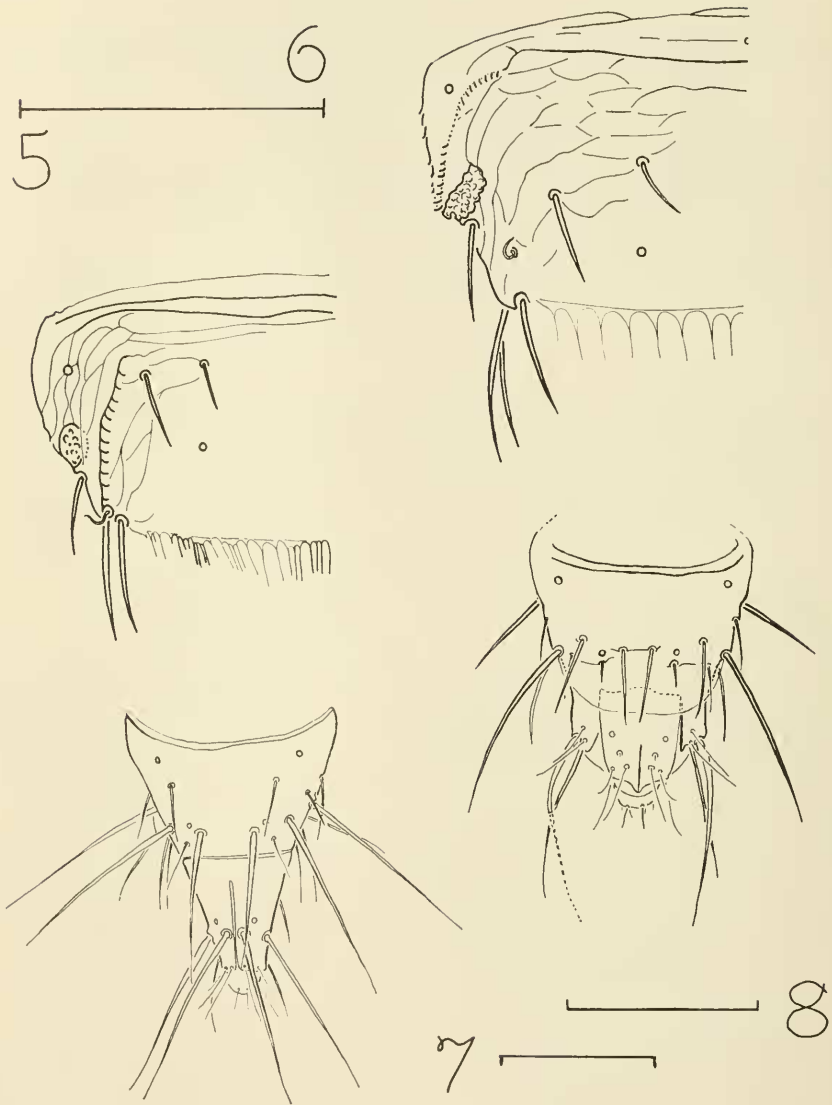


FIG. 5. *Thrips angusticeps* Uzel: abdominal tergum VIII, ♀, left half. FIGS. 6-8. *Frankliniella hawksworthi*, n. sp.: 6, abdominal tergum VIII, ♀, left half; 7, abdominal terga IX-X, ♀; 8, abdominal terga IX-X, ♂. Line = 0.1 mm.

who first recognized the species as new and allowed me to use the material Dr. Hawksworth sent him. Specimens will be returned for the Survey collection.

All measurements are in microns.

Frankliniella hawksworthi, n. sp.

(Figs. 1-4, 6-8)

Holotype ♀: Body and appendages brown, paler individuals with antennal segment I a little lighter and tarsi and all but outer margins of tibiae yellow brown; internal pigment dark orange-red, almost concolorous with ocellar pigment but not as bright, throughout thorax and scattered in abdomen.

Body (about normally distended) 1450 long; major setae shorter than usual in the genus. *Head* (fig. 1) transverse, 114 long, 165 wide just behind eyes; ocellar setae iii 28 long, 26 apart; ocular setae iv 28 and 30 long; remaining setae minor. *Mouth cone* just less than head length, extending 108 behind posterior dorsal head margin. *Antenna* (fig. 2) 268 long, about $2\frac{1}{3}$ times head length; segment III 55 long; III and IV (fig. 4) each with 4 or 5 rows of microtrichia dorsally; all sense cones with circular or short oval base.

Pronotum (fig. 1) with extremely faint transverse striation; anteromarginal setae 30/22 long; anteroangulars 32/32; posteroangular pair i 47/49, pair ii 51/51; posteromarginal pair ii 28/26, pairs i and iii-v minor, subequal to each other. *Mesonotum* with transverse striae about normally spaced for the genus, 11 crossing meson; metanotum as in fig. 3, its sculpture distinct, with pair of pores near hind margin. *Legs* normal; hind tibia 168 long. *Forewing* with subbasal clear spot small, about $\frac{1}{3}$ width of wing at that point; setae of costa 29, fore vein 22, hind vein 16, their lengths at midwing 42, 38, and 30.

Abdomen VIII (fig. 6) with tergal comb complete, moderate, 16 long, sparse laterally (16 teeth about 6 apart mesally, 10 apart laterally); ovipositor 230 long. Terga IX and X (fig. 7) each 71 long; IX setae i, ii, and iii, 80/82, 122/123, and 124/123 long; X setae i and ii, 129/129 and 113/116 long, about equal to IX ii and iii.

Allotype ♂ (somewhat teneral): Color and sculpture as in ♀ but paler, especially in fore tibia; antenna I concolorous with body and distal segments darker; ♂ paratypes colored as holotype.

Allotype body (about normally distended) 1030 long; *antenna* 245 long; *sterna* III-VII each with a small, circular, punctate glandular areas 7-10 in diameter (areas in paratypes similar or oval and as much as 22 long); tergum VIII with comb obscured; paratypes with scant sparse combs of about 14 broad-based teeth not usually as long (5-10) as distance between them (10). Terga IX and X as in fig. 8; IX with anterior pairs of discal setae 31 32-30/32 long, posterior pair short and weakly thornlike.

Described from ♀ holotype (USNM no. 70760), ♂ allotype, 14♀ and 2♂ paratypes, Colorado, Larimer Co., Ft. Collins 20 mi. E, Roosevelt National Forest, 7500', *Arceuthobium vaginatum* (Willd.) Presl f. *cryptopodum* (Engelm.) Gill, 9 Oct. 1959, F. G. Hawksworth; and other paratypes, from the same host plant except as noted, as follows: Same data except 30 June 1959, 1♀ 1♂; Arizona, Flagstaff, Fort Valley Experimental Forest, 22 May 1955, Hopk. #37190, lot 55-7024, 13♀♀; same except 10 Aug. 1957 and without Hopk. number, 18♀♀ 6♂♂; New Mexico, Cloudercroft, *Arceuthobium* sp., 26 Mar. 1953, R. K. Bennett, Hopk. #37045, lot 53-12822, 4♀♀.

REFERENCE

- Hawksworth, F. G. 1961. Dwarfmistletoe of ponderosa pine in the Southwest. U. S. Dept. Agr. Tech. Bul. 1246:1-112, figs. 1-54, tables 1-12 and unnumbered tables.

A REVIEW OF THE ICHNEUMONIDAE DESCRIBED BY GIRAULT
(HYMENOPTERA)

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ABSTRACT—A. A. Girault described two new genera and 25 new species of Ichneumonidae, all of them from Australia. All but one of the types are in the Queensland Museum. These have been studied, are redescribed, and there is some new synonymy. *Ariostonia* Girault is not an ichneumonid genus but belongs in the Gasteruptiidae. *Austrapophua* Girault is a synonym of *Xanthopimpla*.

A. A. Girault, the well-known chalcidologist, on a few occasions turned his attention to the Ichneumonidae. This resulted in the description of 25 new species and two new genera, all of them from Australia. His descriptions are no better nor worse than most others of his time. Put more explicitly, they usually do not lead to an identification. In 1961, I made an attempt to place Girault's species in their correct genera (Townes, Townes, & Gupta, 1961, Mem. Amer. Ent. Inst. no. 1, 522 pages). This attempt was materially aided by notes on some of the Girault types sent to me by Mr. A. W. Parrott.

Dr. E. Dahms, Curator of Entomology at the Queensland Museum, recently offered to make the Girault types of Ichneumonidae that are in his care available to me for study. That opportunity was taken and redescriptions of the types appear below. In some cases the types will probably have to be studied again when the Australian representatives of their genera are known well enough that the precise specific characters necessary to observe on the types are more clearly apparent.

In the 1961 publication mentioned above one of Girault's papers containing descriptions of ichneumonids was overlooked. This was a pamphlet of 5 pages, privately published in 1933 with the title: "Some beauties inhabitant not of commercial boudoirs but of Nature's bosom, notably new insects." The new species and a new genus proposed in this paper are included in the treatment below, along with the others that were catalogued in 1961.

Girault's two new "ichneumonid" genera were *Ariostonia* and *Aus-*